United States Environmental Protection Agency

Using a Total Environment Framework (Built, Natural, Social Environments) to Assess Life-long Health Effects of Chemical Exposures
August 13 - 14, 2018
EPA - RTP
North Carolina
Room C114

EPA ORD SHC and NCER Science to Achieve Results (STAR) program are teaming up to host 3 newly awarded research project teams under the RFA, "Using a Total Environment Framework (Built, Natural, Social Environments) to Assess Life-long Health Effects of Chemical Exposures" which sought research on how pollution affects human health in the context of the total environment – built, natural, and social environments integrated together with inherent characteristics and interactions.

The main goal of the RFA: This STAR RFA sought to advance scientific understanding of the causal mechanisms linking environmental pollutants to adverse health effects by combining the recent advancements in exposure science, cumulative risk assessment research, health impact assessment approaches, biomarker or metabolite research (as in allostatic load models or adverse outcome pathways models), and exposome research. EPA has been seeking research that will investigate chemical exposures (direct or indirect exposures) and subsequent health effects using a holistic, total environment framework that considers the natural, built, and social environments together with a person's inherent or intrinsic biological determinants, activities/behaviors, and policies/programs over different lifestages and generations. Research projects that integrate a diverse field of disciplines (social science, economics, epidemiology, engineering, environmental science, biology, statistics, toxicology, chemistry, etc.) to address the complexity of the total environment research problem were highly recommended.

Meeting Objectives:

(1) Introduce the 3 EPA STAR "Total Environment" research projects and their research plans and objectives.
(2) Introduce the relevant EPA ORD intramural researchers and research activities.
(3) Discuss integration of the STAR research and the intramural research projects to achieve maximum potential impacts that are aligned with EPA's mission of protecting human health and the environment.

DRAFT AGENDA

Day 1 - August 13, Monday

Opening Remarks and Overview – Moderator: Intaek Hahn

1:00 PM **Opening Remarks** – EPA's Sustainable and Healthy Communities (SHC) Research Projects

Mike Slimak, Ph.D., National Program Director (NPD) for EPA's Sustainable and Healthy Communities (SHC) Research Program

Andrew Geller, Ph.D., Deputy National Program Director for EPA's SHC Research Program

Overview - EPA ORD Intramural Research

1:20 PM **Nicolle Tulve, Ph.D.**, NERL, Total Environment Concept and Research Framework

1:40 PM **Tim Wade, Ph.D.**, NHEERL, Public Health Research at EPA

STAR Grantees' Research Project Presentations (Interactive session with questions and answers during presentations) – Moderator: Intaek Hahn

2:00 PM Ex. 5 Deliberative Process (DP) **, University of North Carolina**

Building Water Infrastructure to Improve Childhood Outcomes: Interventions to Decrease Childhood Lead Exposure from Private Wells

2:30 PM Ex. 5 Deliberative Process (DP) **Meharry Medical College**

Using an Exposome Approach to Assess the Effects of PM2.5 on CVD Outcomes

3:00 PM ***Break***

3:15 PM Ex. 5 Deliberative Process (DP) **, Colorado State University**

Southeast Wisconsin Interdisciplinary Study of Children's Health, Ecological Exposures and Social Environment (SWISCHEESE)

EPA and NIEHS Perspectives

3:50 PM PM-CVD Research – **Wayne Cascio, M.D.,** Director, NHEERL, EPA

4:10 PM Lead in Drinking Water Research – **Chris Impellitteri, Ph.D**., Associate NPD, SSWR

4:30 PM Exposome Research at NIEHS – Ex. 5 Deliberative Process (DP), Director, CHEAR Program, NIEHS

4:50 PM South Philly Case Study: Social Determinants of Health - **Jennifer Richmond-Bryant, Ph.D.**, NCEA

5:10 PM Q & A, Discussion

6:00 PM Group Dinner at MEZ

Day 2 - August 14, Tuesday

9:00 AM Summaries/impressions from the Day 1 from meeting participants

9:30 AM PANEL Discussion on How/What to Integrate among STAR and EPA projects

Panelists: STAR Researchers, Mike Slimak, Andrew Geller, Wayne Cascio, Chris Impellitteri, Ex. 5 Deliberative Process (DP), Nicolle Tulve, Tim Wade, and others

STAR PI's and EPA research leads will discuss potential collaboration opportunities among STAR projects and EPA intramural projects to achieve maximum potential impacts and outputs/outcomes.

Key Discussion Point:

Outputs (models, tools, database, activities, etc.) that will lead us to (preferably) measurable outcomes in environmental/ecosystem decision-making that will produce desired beneficial impacts to the health and well-being of community residents. We will also focus on how do we translate research results to meaningfully and effectively demonstrate the impacts.

Charge Questions:

1. What are the most desirable Outputs/Outcomes out of the 3 Total Environment Research Projects?

2. How can the Total Environment information and data be used for rapid/intermediate/comprehensive HIA (Health Impact Assessment)?

3. How to use data in decision makings for public health & well-being and how to provide practical solutions for the total environmental resiliency in communities?

Noon Meeting Adjourn and Optional Networking/Discussion Lunch at EPA cafeteria